

**A new crab species of the genus
Pseudorhombila H. Milne-Edwards, 1837
(Crustacea: Decapoda: Goneplacidae)**

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Abstract.—A new crab species of *Pseudorhombila* was found in the southwestern Gulf of Mexico. A description of the new species, *Pseudorhombila ometlanti*, is given and is compared with other known species in the genus from the western Atlantic: *P. octodentata*, *P. quadridentata* and *P. guinotae*. Among western Atlantic species of the genus, *P. ometlanti* can be distinguished by carapace texture, dentition and sexual characters.

Resúmen.—Una nueva especie del género *Pseudorhombila* se recolectó en el suroeste del Golfo de México. Se presenta la descripción de *Pseudorhombila ometlanti*, especie nueva, y se compara con otras especies descritas para el Atlántico oeste: *P. octodentata*, *P. quadridentata* y *P. guinotae*. Entre estas especies, *P. ometlanti* se distingue por la textura y dentición del caparazón, y la morfología de los pleópodos en machos y gonoporos en las hembras.

Epibenthic macroinvertebrates from shrimp grounds along the southwestern Gulf of Mexico were studied during a three year program. Several goneplacid crab species of the genus *Pseudorhombila* H. Milne-Edwards, 1837, were found among the decapod crustaceans collected. As Guinot (1969) has stated, this is a genus in need of study. Species of this genus are typical catometopian crabs with a large part of the eighth sternite visible at the level of the second abdominal segment and its juncture with the seventh sternite. The sternal position of the male genital openings is another diagnostic characteristic.

Pseudorhombila crabs are a common component of the macroinvertebrate fauna of the southwestern Gulf of Mexico (Vázquez Bader & Gracia G. 1994). While studying our collections, we found that some of the specimens did not represent any of the species of this genus in the western Atlantic, all of which occur in the Gulf of Mexico (*P. octodentata* Rathbun, 1906; *P. quadridentata* (Latreille, 1828) and *P. guinotae* Her-

nández-Aguilera, 1982), and actually represent an undescribed species.

A complete description of this new species of the genus *Pseudorhombila* is given and its affinities with other known species of the genus are discussed.

Materials and Methods

The specimens used in this study were collected during the study "Monitoreo de las Fases de Pre-reclutamiento de las Especies Estuarino-dependientes de Importancia Comercial frente a Laguna de Términos" (MOPEED) conducted in Banco de Campeche, Campeche, Mexico; and during the cruises by the R/V *Oregon II* in the southern Caribbean (Panamá, Colombia). In the Gulf of Mexico samples were taken quarterly on board the R/V *Justo Sierra* of Universidad Nacional Autónoma de México, using a semicommercial otter trawl.

The material examined is listed as follows: location (MOPEED 1 and 3 or R/V *Oregon II* station number), latitude, longi-

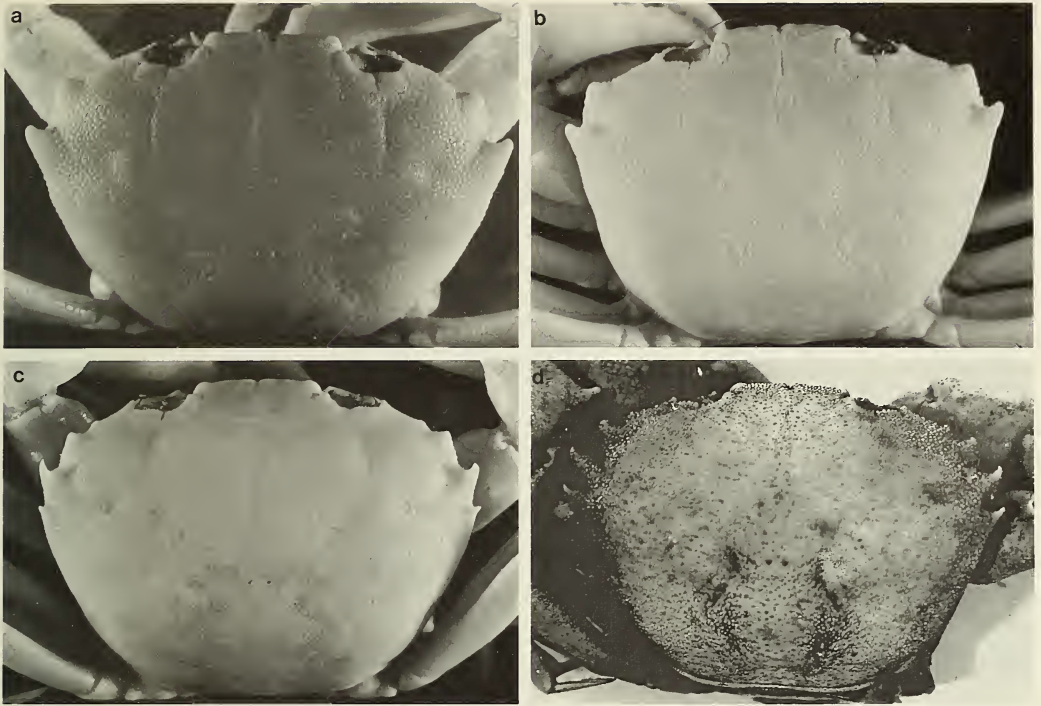


Fig. 1. Carapace, dorsal surface. a, *Pseudorhombila ometlanti*, new species, male holotype. Carapace length 26.5 mm (SMIOM 4065); b, *Pseudorhombila quadridentata* (Latreille), male, carapace length 25.2 mm (USNM 171616); c, *Pseudorhombila guinotae* Hernández-Aguilera, male holotype, carapace length 29.0 mm (SMIOM 000304); d, *Pseudorhombila octodentata* Rathbun, male, carapace length 24.1 mm (photograph by D. Guinot).

tude, depth, date, number, sex, and museum number. All specimens have been deposited in the Colección de la Secretaría de Marina, México, D. F., México (SMIOM) and in the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM). Other abbreviations used are, p, pereiopod, and pl, pleopod.

Pseudorhombila ometlanti, new species

Figs. 1a, 2, 3a, 4a–b, 5a, 6a, 7a,
Table 1

Material examined.—Southwestern Gulf of Mexico: MOPEED3 sta C-2 (Banco de Campeche, Campeche, Mexico) 19°30.96'N, 91°50.09'W; 45 m, 14 Sep 1992, 1 ♂ holotype, SMIOM 4065; MOPEED 1 sta R-1 (vicinity of Laguna de Cármen y Machona, Tabasco, Mexico), 18°38.43'N, 93°46.68'W;

79 m, 18 Feb 1992, 1 ♂, 1 ♀ SMIOM 4066. Southern Caribbean: R/V *Oregon II* sta 10259 off Barranquilla, Colombia, 10°59'N, 75°17'W; 72 m, 12 Feb 1968, 2 ♂ USNM 268442; sta 11234, Gulf of Urabá, Colombia 8°49'N, 76°53'W, 50 m, 11 Feb 1970, 1 ♂ USNM 268443.

Description.—Carapace much broader than long, coarse granulation visible at naked eye, more evident on and adjacent to margins. Regions partially marked. Carapace broadest at second anterolateral tooth. Frontorbital width more than $\frac{1}{2}$ carapace width. Front convex divided by distinct median notch into 2 rectangular lobes.

Supraorbital margin bisected by 2 sutures with granulation continued to outer orbital tooth (first anterolateral); suborbital margin mesially with triangular tooth visible in dorsal view. Anterolateral margin



Fig. 2. *Pseudorhombila ometlanti*, new species, male holotype (SMIOM 4065). a, ventral surface of anterior region; b, sternum, postero-ventral view.

convex, projecting 2 teeth; first tooth granulated, rounded; second tooth triangular, granulate, directed anteriorly, acute and distinctly separated from first. Posterolateral margin converging posteriorly.

Epistome broadest at mid-length, with thick lip medially, finely granulate. Sternum granulate, first segments and abdominal depression with long soft setae, episternal sutures 4, 5, and 6 marked, 7 poorly defined; abdominal depression broad and shallow. In male, posterior sternal segments separated from preceding segments by genital groove. In female, gonopores large, circular, with margin slightly elevated posteriorly.

Abdomen in both sexes broad, punctate. In male, segment 1 widest and longest of all, segment 2 narrow; large portion of eighth sternite visible between second and third abdominal segment, segment 3 with lateral angles not acute and not reaching coxa of fifth pereopod; segments 3–5 partially fused, sutures remaining conspicuous. Abdomen of female widest at segment 1; segment 6 longer than any of preceding ones, last segment spear-like.

Eyestalks very broad, anterior surface with coarse granulation, with long soft setae dorsally and anteriorly; cornea dilated.

Anntenules prominent, folding transversely, basal article thickest, with longitudinal crest granulate; second article elongate, subcylindrical; third article nearly equal in length to second, with long marginal setae distally.

Basal anntenal article broad, closing orbital hiatus between frontal lobe and suborbital tooth, basally with operculum of excretory pore occupying part of closed suture at anterolateral corner of epistome; following articles free, elongate, subcylindrical, and decreasing in length.

Third maxilliped very granulated, pilose, ischium with medial longitudinal furrow, merus densely granulated with depression at either side of raised median area, distomesial margin terminating in angular lobe, distolateral corner rounded, granulated.

Chelipeds (p1) slightly shorter than first walking leg (p2), slightly unequal in female. Movable finger or major cheliped with lobiform proximal tooth. Fixed finger with 2 longitudinal ridges on outer surface. Palm with inner surface smooth; outer surface smooth to punctate; inferior surface with granulated crest. Carpus with strong, triangular tooth on inner angle, tip directed anteriorly, concentration of coarse granules below tooth and on superior and inferior margin. Merus with external surface very granulated and with stiff bristles, inner surface smooth, superior margin ending in sharp distally-directed tooth. Dactyls of walkings legs 1–4, each with corneous tip and with longitudinal rows of setae. Propodi of legs 1–3 granulate, elongate and with long setae, propodi of p4 with shorter setae; superior surface of meri of pereopods with depression delimited by small granules; inferior surface with strong granulation (less evident on p4). Carpi with superior margin densely granulated, (more so in p1–3), inferior margin with coarse granules.

Male gonopod (p11) elongate, apex terminating in hump continued in large lobe with approximately 19 spines. Anteromesial margin with approximately 34 small, spaced spinules, distal end with 19 large, recurved spines; proximal boss on posteromesial surface with row of about 8 bristles. Male p12 elongate, narrow, sigmoid, terminal process curved, with small spinules and distally strap-like.

Size. — Carapace length and width of male holotype 26.5 and 35.2 mm, respectively; males 27.8 and 38.0 mm (SMIOM 4066), 24.0 and 31.8 mm (USNM 263442), 21.7 and 27.9 mm (USNM 268442), 25.0 by 33.8 mm (USNM 368443); female 27.4 and 37.0 mm (SMIOM 4066).

Color. — Not known in fresh specimens. In alcohol, the specimens are salmon-pink.

Known range and habitat. — Western Atlantic from the southwestern Gulf of Mexico (Banco de Campeche, Campeche, Mexico) to southern Caribbean (Golfo de Urabá,

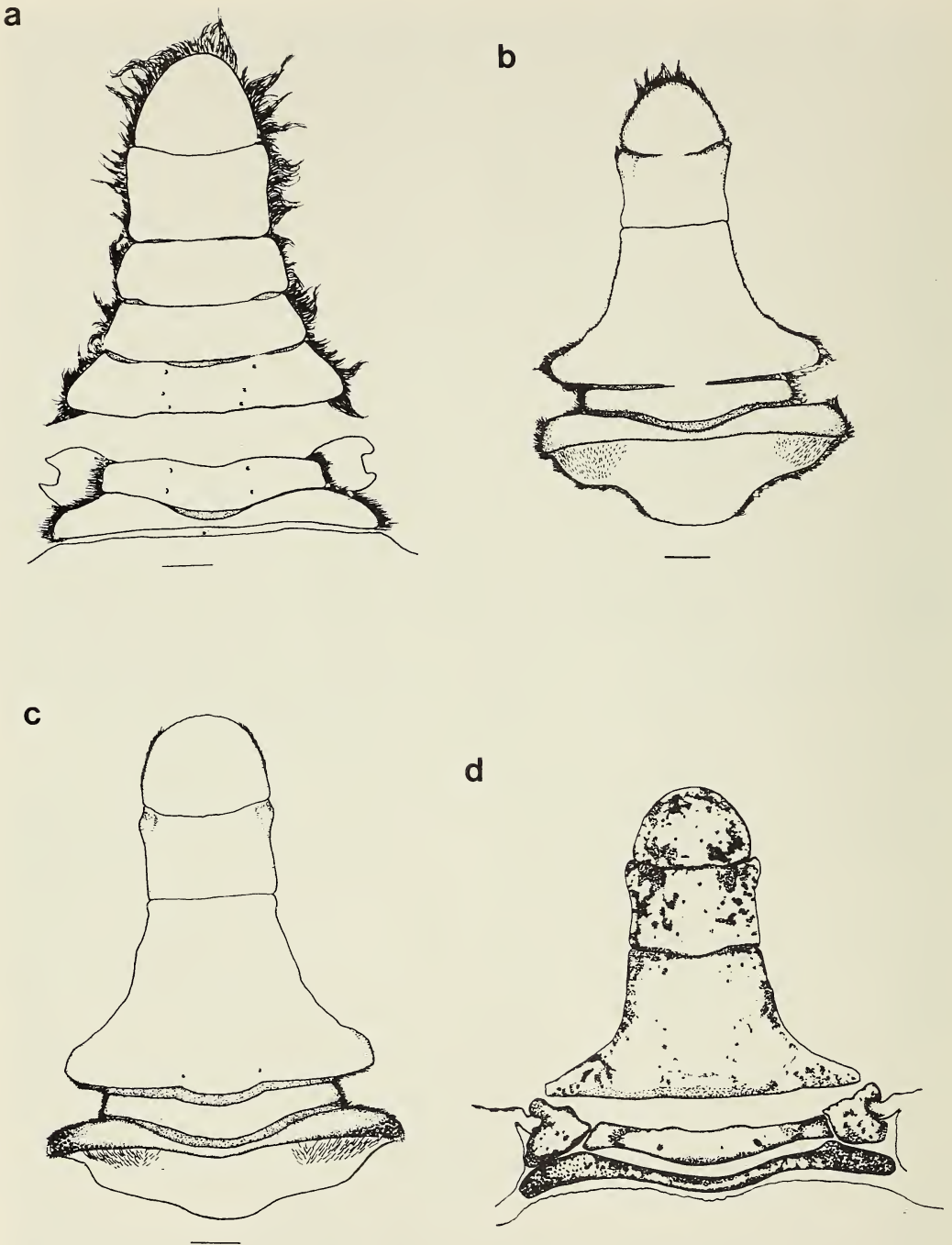


Fig. 3. Male abdomen and telson. a, *Pseudorhombila ometlanti*, new species, male holotype (SMIOM 4065), abdomen and telson; b, *Pseudorhombila quadridentata* (Latreille) (USNM 171616); c, *Pseudorhombila guinotae* Hernández-Aguilera, holotype (SMIOM 000304); d, *Pseudorhombila octodentata* Rathbun, holotype (USNM 32690). Scales = 1 mm.

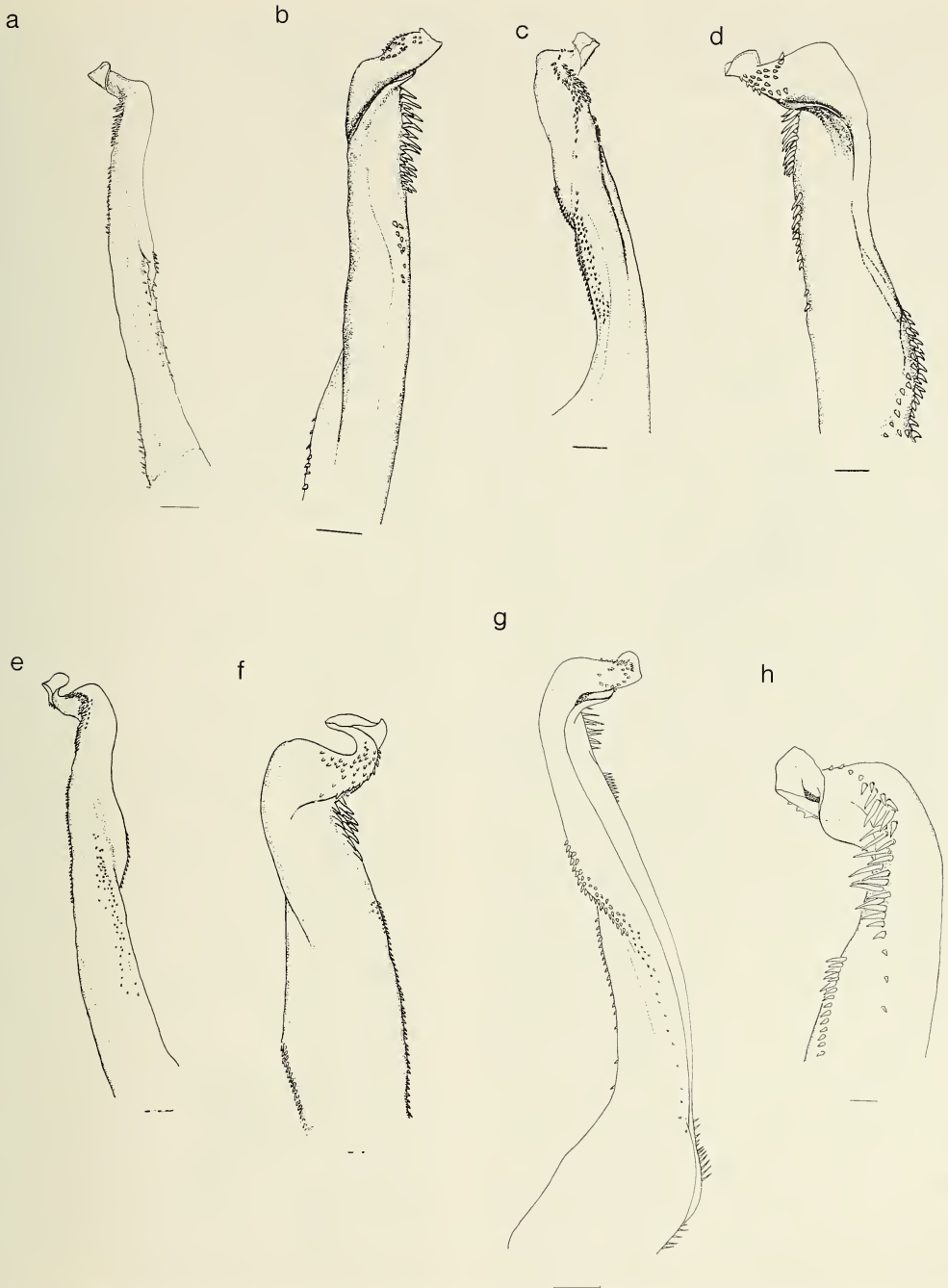


Fig. 4. Male first gonopod. a–b. *Pseudorhombila ometlanti*, new species, holotype (SMIOM 4065): a, left mesial surface; b, enlarged tip of same posterior surface. c–d. *Pseudorhombila quadridentata* (Latreille) (USNM 171616); c, right mesial surface; d, enlarged tip of same posterior surface. e–f. *Pseudorhombila guinotae* Hernández-Aguilera holotype (SMIOM 000304); e, left mesial surface; f, enlarged tip of same posterior surface. g–h. *Pseudorhombila octodentata* Rathbun, holotype (USNM 32690); g, left posterior surface; h, enlarged tip of same mesial surface [g–h, after Guinot (1969)]. Scales = 1 mm.

and off Barranquilla); from 23 to 72 m depth. During the MOPEED study, *P. ometlanti* was collected on substrates composed mostly of mud.

Etymology.—The specific name is from the nahuatl language, *ome* meaning two, and *tlanti* meaning tooth, and is a noun in apposition. The name is given in reference to the two anterolateral teeth of the carapace.

Remarks.—*Pseudorhombila ometlanti* is the fourth species of the genus *Pseudorhombila* known to occur in the western Atlantic. The new species can be distinguished from the other species on the basis of carapace texture and dentition, and shape of male and female abdomen. Also, the forms of the first and second pleopods in the male, and the female gonopores, are distinctive (Table 1). The carapace granulation of *P. ometlanti* is stronger than in *P. quadridentata* (Fig. 1b) and *P. guinotae* (Fig. 1c), but it is less strong than in *P. octodentata* (Fig. 1d). With respect to carapace shape and dentition, *P. ometlanti* is similar to *P. quadridentata*. Both have two anterolateral teeth, whereas the other two species have three and four teeth. However, Hernández-Aguilera (1982), reported that *P. guinotae* can present two anterolateral teeth. Abdomen shape is another character that distinguishes the new species. The abdomen in the other three species is narrower than in *P. ometlanti*, with segments 3–5 fused and undistinguishable sutures (Fig. 3b, c, d). The holotype male of *P. ometlanti* has a broader abdomen than the other three species, and is fitted in a shallower and broader abdominal depression. Although in male paratypes the abdomen is not so broad as in the holotype, it can be easily distinguished from the abdomen of the other three species. In all the specimens examined of *P. ometlanti*, the sutures of the abdominal segments are present; only the suture of segment 4 is interrupted in a small portion of the median line.

With respect to p11, the four species of *Pseudorhombila* show distinct differences in

the shape of lobe apex and number of spines (Figs. 4c–d, e–f, g–h; Table 1). The P12 of the three previously known species is slightly shorter than in *P. ometlanti*, not recurved, and the terminal processes are distally tapered; whereas in the new species the terminal process is strap-like (Fig. 5b, c, d). Although the female abdomen of all four species have all segments free, the last segment differs in shape (Fig. 6b, c). The gonopores in the four species also differ. *Pseudorhombila guinotae* and *P. octodentata* exhibit oval-shaped gonopores, whereas in *P. quadridentata* and *P. ometlanti* the gonopores are nearly circular (Fig. 7b, c, d).

The following key separates the species of *Pseudorhombila* known in the western Atlantic.

Key to the Species of *Pseudorhombila*

- 1. Anterolateral margin of carapace with 2 teeth 2
- Anterolateral margin of carapace with 3 to 4 teeth 3
- 2. Dorsal surface of carapace with fine granulation. Male abdomen narrow, sutures not evident. Anteromesial margin of male gonopod (P11) with approximately 55–60 small spines, distally with more than 60 spines, apex terminating in well defined hump. Female gonopores nearly circular *Pseudorhombila quadridentata*
- Dorsal surface of carapace with coarse granulation. Male abdomen broad, segments 3–5 almost free, sutures well marked. Anteromesial margin of male gonopod (P11) with approximately 34 small spines, distally with 19 recurved spines, apex terminating in poorly defined hump. Female gonopores circular. *Pseudorhombila ometlanti*
- 3. Dorsal surface of carapace with very coarse granules. Anteromesial margin of male gonopod (P11) with approximately 25 spinules. Apex ter-

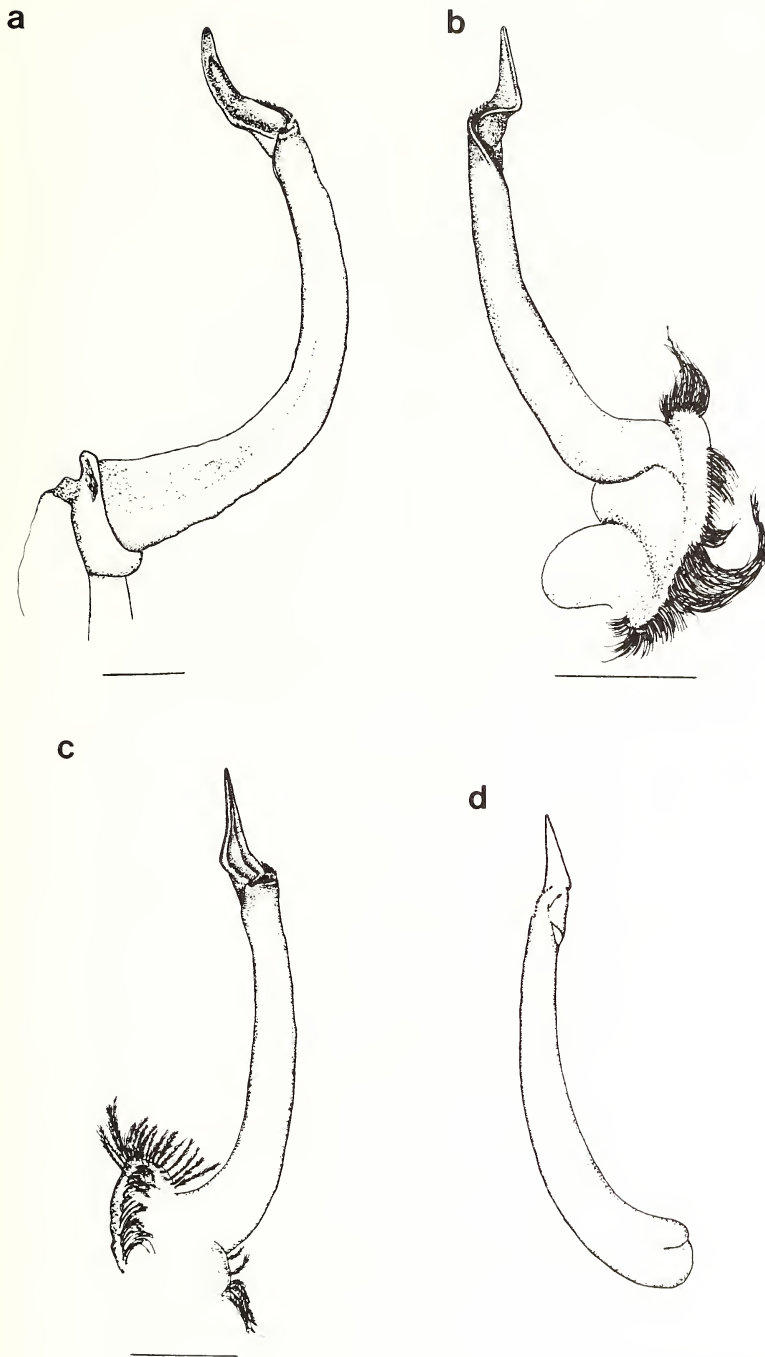


Fig. 5. Male second gonopod, a, *Pseudorhombila ometlanti*, new species, holotype (SMIOM 4065), right mesial surface. b, *Pseudorhombila quadridentata* (Latreille) (USNM 171616), left mesial surface. c, *Pseudorhombila guinotae* Hernández-Aguilera (SMIOM 4067), right mesial surface. d, *Pseudorhombila octodentata* Rathbun, holotype (USNM 32690), left mesial surface [d, after Guinot (1969)]. Scales = 1 mm.

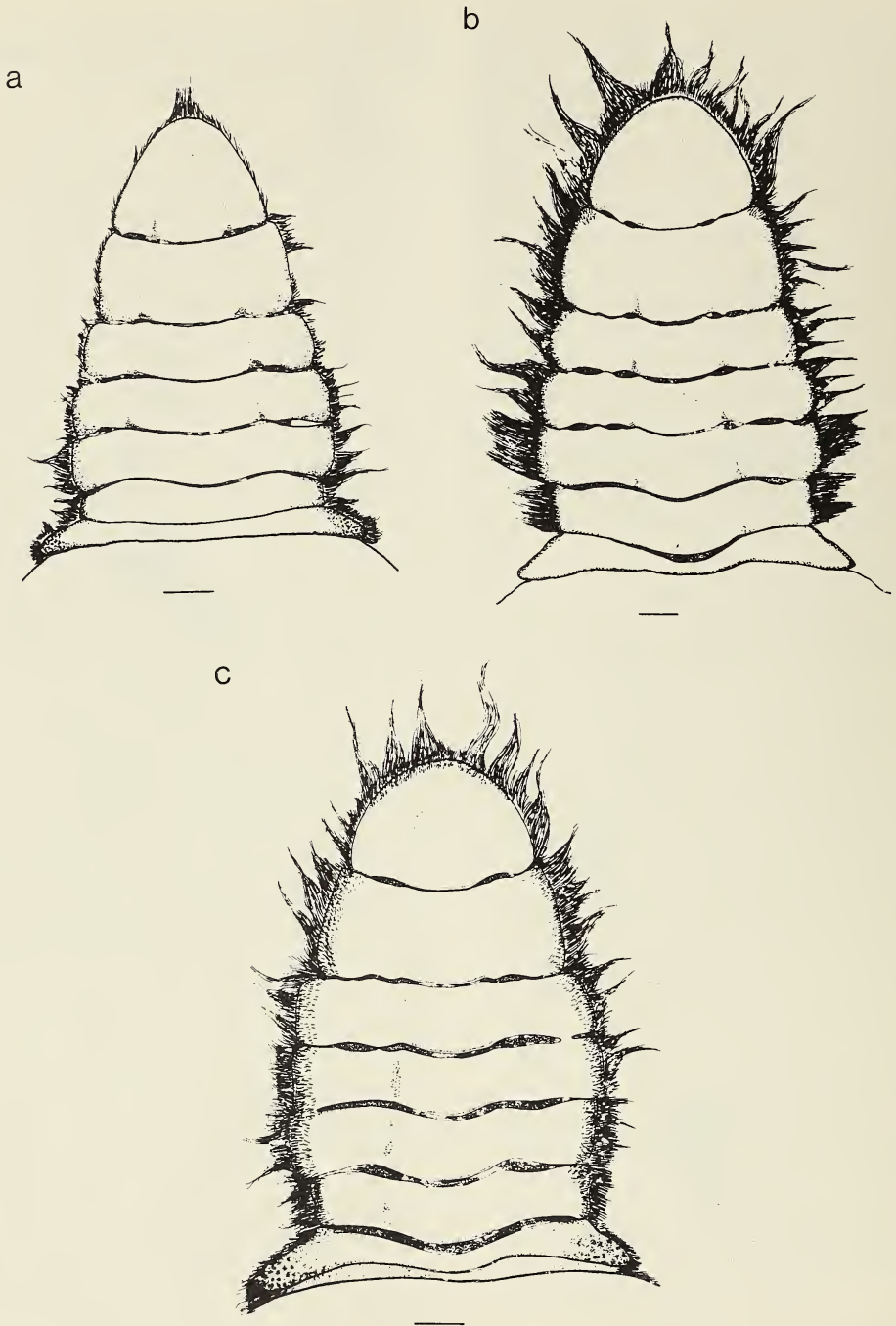


Fig. 6. Female abdomen and telson, ventral view. a, *Pseudorhombila ometlanti*, new species (SMIOM 4066). b, *Pseudorhombila quadridentata* (Latreille) (USNM 171616). c, *Pseudorhombila guinotae* Hernández-Aguilera (SMIOM 4068). Scales = 1 mm.

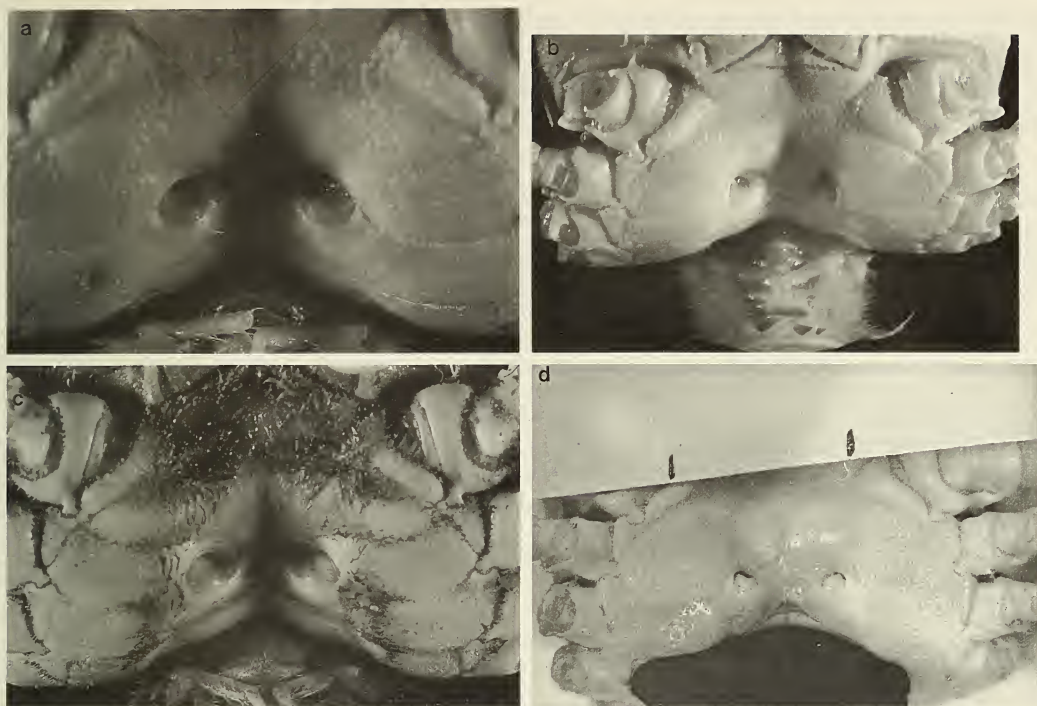


Fig. 7. Female sternum and gonopores. a, *Pseudorhombila ometlanti*, new species, carapace length 27.4 mm (SMIOM 4066). b, *Pseudorhombila quadridentata* (Latreille), carapace length 24.1 mm (USNM 171616). c, *Pseudorhombila guinotae* Hernández-Aguilera, carapace length 30.5 mm (SMIOM 4068). d, *Pseudorhombila octodentata* Rathbun (Muséum national d'Histoire naturelle, Paris; photograph by D. Guinot).

minating in poorly defined hump.

Female gonopores oval and narrow

..... *Pseudorhombila octodentata*

– Dorsal surface of carapace with very

fine granulation. Anteromesial margin

of male gonopod (P11) with approxi-

mately 41 small separated spines, distally

with approximately 49 large recurved

spines, apex terminating in hump not

prominent. Female gonopores oval and

broad

..... *Pseudorhombila guinotae*

Three species of *Pseudorhombila* have

been reported in the Gulf of Mexico, *P.*

ometlanti, *P. quadridentata* and *P. guinotae*.

According to J. L. Hernández-Aguilera (pers.

comm.), *Cyrtoplax bidentata* Gómez & Or-

tiz, 1975, found in Cuba, is a junior syn-

onym of *P. quadridentata*, so its geographic

range includes the Caribbean. The new spe-

cies is also distributed outside of the Gulf

of Mexico, off the Colombian coast. *Pseu-*

dorhombila octodentata is only known from

the Lesser Antilles (Dominica and Marti-

nique) at 180 m depth (Rathbun 1906,

1918). Hernández-Aguilera (1982) men-

tions that the latter species occurs in the

northwestern Gulf of Mexico; however,

Vázquez Bader & Gracia G. (1994) did not

find this species in the southwestern Gulf

of Mexico. The depth range is similar among

the four species. *Pseudorhombila guinotae*

has a relatively wide depth range, from 57

to 112 m, while *P. ometlanti* and *P. quad-*

ridentata have a narrower depth range, from

45 to 79 m for the former, and 20 to 63 m

for the latter.

Pseudorhombila ometlanti is more simi-

lar to *P. quadridentata* with respect to car-

Table 1.—Diagnostic characters of species of *Pseudorhombila* H. Milne Edwards, 1837.

	<i>P. octodentata</i>	<i>P. guinotae</i>	<i>P. quadridentata</i>	<i>P. ometlanti</i>
Carapace	Dorsal surface with very coarse granules	Dorsal surface with very fine granulation	Dorsal surface with fine granulation	Dorsal surface with coarse granulation
Carapace dentition	4 anterolateral teeth	3–4 anterolateral teeth	2 anterolateral teeth	2 anterolateral teeth
Abdomen	Male: narrow, segments 3–5 fused; sutures not evident	Male: narrow, segments 3–5 fused; sutures not evident	Male: narrow, segments 3–5 fused; sutures not evident	Male: broad, segments 3–5 almost free; sutures well marked
	Female: segments 1–7 free	Female: segments 1–7 free, last segment rounded	Female: segments 1–7 free, last segment triangular	Female: segments 1–7 free, last segment spear-like
Male gonopod (p11)	Anteromesial margin with approx. 25 spinules. Apex terminating in poorly defined hump, continuing in short lobe, with approx. 25 spinules	Anteromesial margin with approx. 41 small separated spines, distally with approx. 49 large recurved spines. Apex terminating in hump not prominent, continuing in a large lobe, with 34 spines	Anteromesial margin with approx. 55–60 small spines; distally with more than 60 large recurved spines. Apex terminating in well defined hump, continuing in a broad lobe, with 33 spines	Elongate, anteromesial margin with approx. 34 small spines; distally with 19 recurved, large spines. Apex terminating in poorly defined hump, continuing in a large lobe, with 19 spines
Male gonopod (p12)	Short, not recurved, terminal process distally tapered	Short, not recurved, terminal process distally tapered	Short, not recurved, terminal process distally tapered	Elongate; recurved, terminal process with small spinules and distally strap-like
Female gonopores	Oval, narrow; margin slightly sinuous	Oval, broad; margin sinuous	Nearly circular margin sinuous	Circular, large; margin prominent

apace shape and dentition, than to any of the other three species in the genus. The shape of the abdomen, pleopods, and gonopores clearly distinguishes *P. ometlanti* from its other congeners.

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